

extra equipment and parts is approximately 2,400 sf. This area has a minimum 28' height clearance.

3. PARKING AREAS

The facility has parking for transfer trailers awaiting loading north of the loading area (Figure A-4). Trucks waiting to load bales of recyclables are parked in loading areas. A staging area is used to keep loading operations running smoothly. Employee and visitor parking is provided adjacent to the SMaRT Station office.

4. ACCESS

Caribbean Drive is the main access route to the SMaRT Station. Caribbean Drive becomes Lawrence Expressway on its eastern end and Mathilda Avenue on its western end. Both Lawrence and Mathilda provide direct access to Highway 237 and Highway 101. North Fair Oaks Avenue, which connects to Java Drive, is the only other roadway in the vicinity of the station which crosses Highway 237 (see Figure A-2).

5. BUILDING PLANS

Figure A-4 and A-6 provide show the layout of facilities that have waste handling activities.

6. TRAFFIC FLOW PLAN

Figure A-4 shows the flow of traffic entering and exiting the facility.

7. WASTE FLOW DIAGRAM

Figure A-5 shows the flow of material through the SMaRT Station.

8. DRAINAGE AND WASTEWATER DISCHARGE

Water introduced to the tipping floor is captured within the facility and is collected and drained to a sump, where it is either pumped through a pretreatment system for eventual discharge to the Water Pollution Control Plant, or pumped into a liquid waste transfer vehicle. The facility is designed so that storm water is captured outside the facility and feeds into storm drains. See Figure A-8a.

The following are the basic design parameters and concepts utilized in the design of the storm water and process water systems.

a) Storm Water System

All storm water from the structure's roof drainage systems and the paved parking and roadway areas is directed across sloped asphalt to catch basins and drop inlets equipped with pollutant filters, which in turn drain to storm drainage canals located immediately west and north of the SMaRT Station. The storm drainage system has been designed using 100 year storm data, for a storm intensity of 3.5 inches per hour, resulting in design storm run-off requirements of approximately 25 cubic feet per second (cfs). In order to prevent storm water from contacting solid waste, wastes that inadvertently collect on the asphalt outside the covered area are removed by litter picking and by sweeping the entire area daily with a mechanical street sweeper. Blowing dust is minimized through use of an interior misting system. Rain water that may blow in to the tipping floor drains internally. Interior floors are designed to drain internally, and exterior asphalt surfaces drain away from the tipping floor. To mitigate the facility's impacts on storm water quality, storm water drop inlets and catch basins have been equipped with filtration devices that remove sediment and filter out oil and grease. Drop inlet and catch basin grates are cleaned at least weekly during rainfall events, sediment and oil and grease traps are checked at least weekly and cleaned as needed.

b) Process Water System

Washdown water and liquids collected from the solid waste materials are retained within the buildings, placed in collection trenches, treated, and then routed to a storage sump for pretreatment and sampling prior to discharge, either into the sanitary sewer system or to an off-site treatment facility via vacuum truck. Dry sweeping systems are the predominant methods for cleanup; however, washdown is done at least once per year. The process water system has been designed for 10 gallons per minute (GPM) washdown capacity, and 10 GPM for the dust suppression system. A dust suppression mist system is installed in the vehicle unloading areas and transfer areas.

c) Drainage Control Capacity

The SMaRT Station storm water drainage system has been designed for a storm intensity of 3.5 inches per hour, resulting in design storm run-off requirements of approximately 25 cubic feet per second (cfs). Storm water is routed to the existing storm water canals located immediately west and north of the Station site.

The project site is protected from the flood elevations by the levees between the site and the adjacent salt ponds. In studies necessary for the Environmental Impact Report, it was concluded that the levees adjacent to the storm water canals are of sufficient height to protect the Station site from any flood levels. (See Figure A-8b).

In February 1998, the west levee of the East Sunnyvale Channel north and south of Caribbean Drive was overtopped by heavy flows following a period of intense rainfall. The drainage canals to which the SMaRT Station storm water discharges

were backed up due to a failure at Baylands #1 pump station coinciding with the flood event. The SMaRT Station remained dry throughout this episode, though access to and from the SMaRT Station was significantly restricted for two hours due to flooding. Since this flood event, the Santa Clara Valley Water District has embarked on a construction project to raise the channel levees. The City of Sunnyvale has also made improvements at the pump station to improve its performance and reliability.

9. UTILITIES PLAN

Figure A-8a shows locations of water supply lines, sewer lines, and storm drains.

10. TRAFFIC DESIGN CALCULATIONS

The SMaRT Station design included analysis of anticipated traffic patterns. Traffic engineering calculations were presented in the original Report of Station Information, and are also included as Appendix I in this Processing/Transfer Report. Follow-up surveys to confirm traffic engineering design calculations and assumptions have not been performed as there have been no significant problems with queuing, traffic flow, or access to the tipping floor, and materials are loaded out of the station on schedule and without exceeding design stockpile quantities. Queuing does occur from time to time during "Extra Dump" events, neighborhood beautification events held twice per year to enable residents to haul bulky wastes not normally collected at curbside. These events are typically held in April (2 weekends) and in October (2 weekends). During these weekend events, queues form on Caribbean Drive during the most popular event hours. However, the use of one lane for queuing does not result in any traffic safety problems. Caribbean Drive has three lanes in each direction and carries very little non-SMaRT Station traffic on weekends. Traffic on weekends is typically light because Caribbean Drive serves an industrial park in which businesses are generally open only on weekdays. Traffic control is nevertheless provided in anticipation of the backup.

The original traffic design criteria and calculations for the SMaRT Station traffic queuing is presented in Appendix I.

B. STATION IMPROVEMENTS

1. IDENTIFICATION AND DIRECTION SIGNS

Signs stating the name of the facility and facility operator are posted at all entrances from public roads. There are also signs throughout the facility directing users to the proper tipping area. Sign locations and content are presented in Figure A-9. Photos of selected signs are presented in the Appendix J, Plates 1 and 2.

2. ENTRY SIGNS

There are signs at the main entrance that provide guidance to drivers of vehicles entering to unload recyclable materials and/or waste at the facility. The signs are of sufficient size for users to readily read the facility name, the SMaRT Station fee schedule, hours of operation, and a listing of the types of materials not accepted at the facility. A sign advising that no hazardous waste can be accepted at the facility has also been erected. Another sign identifies which cities are served by the facility.

3. STATION SECURITY

A six-foot high chain-link fence placed at the site perimeter encloses the facility. The facility is patrolled by an on site security guard during non-operation hours.

4. ROADS

The following criteria have been established for the design, construction and maintenance of all on-site roadways and parking areas.

- All surfaces are paved with asphaltic concrete pavement (3" for parking areas, 5" for all roadways). Aggregate base and sub-base requirements for roadways are 8" class two ABM or 12" class two ABS.
- All roadways are designed to support the largest axle and wheel loads which can be expected from the solid waste transfer trucks and roll-off trucks hauling roll-off compactor units.
- All roadways and parking areas are constructed with a minimum of four (4) feet of compacted granular subgrade to 90% relative compaction, and the 6" of aggregate base immediately beneath the asphalt to 95% relative compaction. This assures a stable pavement system under the anticipated loading.
- All roadways and parking areas are adequately drained to permit proper run-off of all storm water and washdown water.
- The Station operations plan includes a program for daily street/perimeter sweeping. The pavement is capable of withstanding high-pressure washing.
- After nine years of use, there has been no significant settlement, cracking, or other failures of paved surfaces at the SMaRT Station.

5. VISUAL SCREENING

A screening fence was installed along the northern boundary of the site to help block views of ground level activities and traffic. The facility's grounds also include trees and other shrubs.

C. OPERATIONS

1. HOURS OF OPERATION

The SMaRT Station is open to receive refuse from the public Monday through Sunday 8:00 a.m. to 5:00 p.m. and from franchise waste haulers Monday through Saturday 5:00 a.m. to 5:00 p.m. and Sunday from 8:00 a.m. to 5:00 p.m. (when needed).

2. STATION PERSONNEL

The SMaRT Station is operated by a contractor, presently GreenTeam/Zanker of Sunnyvale. A minimum of 111 employees of GreenTeam and contract employees operates the SMaRT Station. GreenTeam/Zanker has organized their staff and contract personnel into five functional groups performing tasks in the areas of operations, materials recovery, maintenance, accounting, and safety and regulatory compliance.

a. Availability

The minimum staffing level for operation of the SMaRT Station is as follows:

PERSONNEL

Office	Number of employees
General Manager	1
Recycling/Compliance Coordinator	1
Accountant	1
HR/Administration Coordinator	1
Accounting Clerk	1
Office Clerk/Receptionist	1
Purchasing/Safety/Training Coordinator	1
<u>Materials Recovery Facility (MRF)</u>	
Manager	1
Supervisor	1
Forklift Operator	2
Baler Operator	1
Quality Control Manager	1
Lead Sorters	4
Sorters	48
Transfer and Wood Waste Operations	
Manager	1
Tipping Floor Supervisor	1

Wood waste Room Supervisor	1
Loader Operators	3
Forklift Operators	2
Compactor Operator	1
Wood Grinder Operator	1
Traffic Control Spotters (Tipping Floor)	2
Traffic Control Spotter (Wood room)	1
Transfer Drivers	10
Floor Sorters (Tipping Floor)	10
Floor Sorters (Wood room)	1
Scale Operations	
Scale Master	1
Assistant Scale Operators	2
Buy Back Attendant	1
Maintenance	
Manager	1
Electrician	1
Lead Mechanic	1
Mechanic	2
Assistant Mechanics	<u>3</u>
Total Staffing	111

A supervisor is on duty during all hours of operation. A designated Health and Safety officer is in charge of enforcing the facility's health and safety plan. The Health and Safety Plan for the SMaRT Station is presented as Appendix L. Designated individuals are trained to perform load checks for hazardous material. In the event of an injury or accident, or if hazardous material is found at the facility, employees are instructed to immediately call for assistance and to notify the facility manager in charge. All special occurrences are recorded in a log.

b. Training

All employees at the facility are provided with monthly safety training including but not limited to, the proper use of personal protective equipment, hazard communication, bloodborne pathogens, emergency action plan and fire protection plan. These training programs have been developed by the station operator and are updated as needed. The Health and Safety Officer ensures that the facility's plan is comprehensive and is followed by all employees and individuals entering the facility. A copy of the Contract Operators' Emergency Response Plan is included as Appendix M.

c. *Emergency Contact List*

Name	Title	Affiliation	Phone Number (408)	Pager/Cell Number (408)
Marvin Rose	Director of Public Works	City of Sunnyvale	408-730-7420	408-499-9975
Mark Bowers	Solid Waste Program Manager	City of Sunnyvale	408-730-7421	408-203-5304
Paul Nelson	General Manager	GreenTeam/ Zanker of Sunnyvale	408-752-8530	408-605-2713

A list of emergency contacts for GreenTeam/Zanker is found in Appendix M.

d. *Operator*

The facility contract operator is presently GreenTeam/Zanker of Sunnyvale, which is responsible for the daily operation of the SMART Station. The City of Sunnyvale entered into a seven year operating agreement with GreenTeam/Zanker of Sunnyvale in 2001 to operate the SMART Station through December 31, 2007.

3. STATION EQUIPMENT

a. *Type, Capacity and Number of Units*

The stationary equipment used in the daily operation of the SMaRT Station is as listed in Appendix H.

b. *Equipment Maintenance*

A maintenance program has been implemented by the contractor, including training of personnel in maintaining facility equipment. Preventive maintenance schedules for equipment have been established in accordance with manufacturer's guidelines and are routinely followed. With this preventive maintenance program the reliability of this Station can be maintained. The anticipated downtime of the Station processing equipment has been estimated to be only two percent of the operating hours. Thus, the resulting overall annual availability of the Station is approximately 98 percent for both the transfer and processing systems.

c. *Standby Equipment*

Equipment used to operate the SMaRT Station includes the following:

Solid-tire loaders for waste handling and pushing to the transfer truck loading area. A minimum of two loaders are available at all times to ensure that the transfer operations are maintained. Essential spare parts are either maintained on-site or are available for purchase locally. In addition, equipment is available for rent locally in the event that this equipment is out of service for a period of time.

A back-up generator is provided to ensure that the scale system is always supplied with electric power.

Equipment installed in the materials recovery and separation area includes conveyors for hand sorting of wastes, screens, baling equipment, and other types of equipment for which parts are often locally available. To provide redundancy for loadout of wastes in the event that the compactor is out of service, an overhead fill conveyor is available for use when the hydraulic compactor is out of service. A spare hydraulic ram has also been secured to provide for rapid repair of the compactor in the event that the cylinder is damaged. When the compactor is out of service, transfer trucks are top loaded; however waste must be hauled in a loose state, reducing transportation efficiency. An emergency standby generator is available to power load out equipment in the event of a power failure.

Downtime during the most recent fiscal year averaged approximately 3% of operating hours, most of which was associated with MRF sorting equipment. There is sufficient storage capacity on the tipping floor to accommodate the levels of MRF equipment and compactor downtime experienced during the first nine years of operation, which included the 'breaking in' period.

4. MATERIALS HANDLING ACTIVITIES

a. Materials Receiving

(1) Materials check in and weighing

Traffic control signs along the access road to one of two inbound scales direct inbound refuse collection vehicles. The scales are used to measure net load weights in order to determine tipping fees. After weighing, collection vehicles proceed from the gatehouse to the tipping area. The primary determination of the suitability of a load for processing is made at the gatehouse or by pre-arrangement with the hauler.

Traffic signs on the access road to the scale house at the entrance facility direct the public. Public customers are charged according to the volume of material being delivered, measured in cubic yards by the scale house attendant. Public vehicles are then directed to the public tipping area or wood yard waste unloading area.

(2) Hazardous Waste Screening

The SMaRT Station does not accept hazardous or designated wastes. However, some household or other hazardous wastes are occasionally incorporated into municipal solid waste. The station operator is required to perform periodic load checking and operate a Hazardous Waste Exclusion Program (HWEP) which dictates the procedure for handling hazardous wastes, which may arrive in the waste stream. The HWEP is intended to protect SMaRT Station personnel from hazardous waste, to ensure safe transport of municipal solid waste from the SMaRT Station to the landfill, and to prevent disposal of hazardous waste in the Kirby Canyon Landfill. The program calls for the detailed inspection of six random loads each week and any

suspicious loads entering the facility. The six loads that are formally inspected include two loads each of commercial waste and industrial waste, and one load each of residential and publicly hauled waste.

Loads chosen for inspection are directed to a specific area on the tipping floor. The area is then isolated to avoid contact with other waste handling activities. The load check team uses the loader, rakes and long handled tools to inspect for hazardous or designated wastes. If no such wastes are found, the load is pushed to the working area for processing. If hazardous or designated wastes are found, the load-check team follows the specified procedure for isolating and returning the unacceptable waste to the generator or packing and moving the materials to the hazardous waste storage area.

Members of load check teams are trained on how to recognize hazardous material, how to isolate the suspect material, which materials not to mix, and the agencies to notify in case certain materials (such as radioactive or explosive wastes) are detected.

Signs are posted near the entrance at the scale house and collection booth, which clearly state the types of waste that are not accepted at the station. Printed on each SMaRT Station scale ticket is a questionnaire regarding hazardous wastes that the customer may be carrying.

(3) Unloading

The waste unloading (tipping area) at the facility is fully covered. Customers are directed by traffic spotters to an area of the tipping floor to empty their loads. Waste hauling vehicles discharge their loads by maneuvering into position outside of the building and then backing into the station for unloading. Vehicles can enter on either the side of the station, or proceed around the East End of the station to the unloading area on the north side of the Station. A covered area of over 36,000 square feet is available for unloading and for storage of unloaded waste materials. Vehicles transporting source-separated recyclables weigh at the scale house to properly record inbound traffic and weight. These vehicles then proceed to the curbside processing area where they are weighed on a 30' scale after each compartment has been emptied and recorded.

(4) Incoming materials storage

Allowing for vehicle movement and proper access, a minimum of 20,000 sf is available for storage. This storage area can accommodate up to 1,000 tons (assuming 10 lb. per sf³), which is approximately one day's total waste volume when taking into account the separate areas for the curbside materials, wood and yard wastes. Therefore, the storage area is sufficient to handle the peak arrival rates, plus provide adequate surge capacity between peak arrival rates and transfer or processing rates.

(5) Hazardous materials storage

Hazardous waste is not accepted at the facility, nor is this facility utilized for a regularly scheduled public household hazardous waste drop-off program. As previously discussed, a hazardous waste exclusion program has been established for the facility.

Hazardous wastes removed from the incoming waste stream are placed into a separate covered, self-contained storage area with double containment (approximately 600 sf) located outdoors on the southeast side of the SMaRT Station structure. These wastes are removed for off-site processing on a regular basis, and not less than once every 90 days. The hazardous materials shed is equipped with a fire suppression system, and accessed only by trained personnel. The removal, categorization, and lab packing of hazardous waste removed from the tipping floor and Materials Recovery Facility is conducted by a licensed hazardous materials handling contractor.

Household sharps, i.e. needles, syringes, and lancets generated by home medication users in the SMaRT Station service area are collected in a specially designed 3-yard capacity sharps receptacle. The receptacle was placed at the buyback recycling area in April 1996 to encourage proper disposal of sharps. Commingling sharps with household waste can lead to accidental needle sticks to workers staffing sorting lines.

Sharps may be discarded in the receptacle during SMaRT Station operating hours (7 days per week, 8:00 AM to 5:00 PM). The receptacle is equipped with a collection chute in which residents place their full containers of sharps. Sharps placed in the chute will slide into a drum. A contracted medical waste handling service performs regularly scheduled sharps disposal. Drum contents are packaged for transport and a tracking document is initiated, which is kept in the record by the SMaRT Station operator. The capacity of the sharps drum is monitored by personnel properly trained in bloodborne pathogen hazards, and is locked to prevent unauthorized entry.

This program is restricted to resident-generated sharps; medical wastes from businesses are strictly prohibited.

b. Salvaging and materials recovery

(1) Materials separation and sorting

The SMaRT Station provides a complete and fully functioning materials recovery operation. The materials recovery operation currently recovers the following materials:

- Fibers (old corrugated cardboard (OCC), old newsprint (ONP), mixed paper)
- Plastics (HDPE and PET bottles and plastic film)
- Ferrous metals and tin cans
- Aluminum

- Glass (all colors)
- Wood
- Green Waste

Most of the materials separation and sorting operations occur at one end of the building, separated from the waste receiving, unloading, and transfer operations. The materials recovery operations consist of feed conveyors, screening equipment, aluminum and plastic sorting equipment, sorting conveyors and balers. Waste processing occurs in an area of approximately 40,000 square feet. Hand sorting techniques are used on several sorting lines to recover various recyclable materials. Reclaimed materials are stored in bins and bunkers until sufficient material accumulates to warrant baling and final transport to buyers.

(2) Storage of separated materials

The recovered recyclable materials are handled as follows:

- All glass is sorted off the conveyors by color and moved by forklift to storage bins located outside the facility at the southwest edge. When sufficient quantities are available, the storage bins are exchanged with empties and transported to a glass beneficiation plant. The outside storage bins are steel 40-yard bins.
- Fibers, aluminum, plastics and tin cans are sorted off the conveyors and placed in storage bins. When sufficient quantities have accumulated, the materials are moved to the baler feed conveyor, baled, and stored within the Station building against the west wall. When a sufficient number of bales has accumulated, they are loaded into trucks and transported to intermediate or end markets. Ferrous metals other than tin cans are stored in 40-yard containers outside at the southeast end of the facility. These containers are exchanged daily by a scrap metal processor.
- Bales are stacked no more than 3 high, with a bale storage area capacity of approximately 500 tons. At 1,500 tons per day and a recovery rate of 25% of baled materials, this storage capacity provides for up to 2 days storage of baled recyclables.
- Wood and yard wastes are shredded and screened into two size fractions -- "Overs" (sized 3" minus) or chips for use as a fuel source, and "unders" (sized 1" minus) for use as compost. These processed materials are placed in storage bays and then loaded into trucks for transport to an off-site processing facility. According to the Sunnyvale fire code, the flammability of the wood stored here requires that this area be zoned as a hazardous material area, which requires extensive fire protection equipment. The area includes a firewall and sprinkler system. Processed wood and yard wastes are typically removed within a 72-hour period.
- The Smart Station recovers small quantities of vehicle tires. Loads containing four tires or fewer are allowed in the SMaRT Station. The recovered tires are stored in a 40-yard roll-off container outside the building at the southeast

corner. Once enough tires have accumulated, they are removed by a licensed waste tire hauler for reuse, retreading, recycling, transformation, or disposal depending on tire quality and market conditions.

(3) Non-recoverable materials storage

All residuals are removed from the Station within 48 hours. The transfer truck compactor loading operation is located away from other facility operations. One compaction station is provided resulting in the capacity to load approximately 70 tons per hour. As stated earlier, the storage or surge area for residuals prior to loading can accommodate up to 1,000 tons, which is sufficient to accommodate the surges between peak arrival rates and loading rates.

At design capacity, with 25% recycling, approximately 1,125 tons per day of residual material from the processing lines and non-processible material from the tipping area can be transported to the Kirby Canyon Landfill.

c. Materials processing and volume reduction

(1) Size reduction

Wood and yard wastes are reduced in size in a building adjacent to the main building. The wood and yard waste building is 9,375 square feet and includes a tipping area, a shredder and a processing conveyor. The wood waste is fed onto the conveyor and moved through a shredder. Green waste and dry wood are shredded separately. Shredded material is sorted into two size fractions (overs and fines) and placed in bays located outside the building. Green fines and wood fines are mixed together, while green overs and wood overs are kept in separate piles. The piles are loaded onto trucks for transport to off-site handling and processing facilities. Wood overs are delivered to wood fuel power plants (also called biomass generation plants) in the region and burned to generate electricity.

(2) Transformation

There are no activities that constitute transformation of material at the SMaRT Station.

(3) Compaction and/or baling

Recovered material and source separated recyclables are conveyed to a baler and baled. Baled materials are then stored until a sufficient quantity has accumulated for vendor pick up. An area of approximately 5,000 square feet on the west side of the main building is designated for the storage of baled materials. Materials from this area are loaded onto semi-trailers or into ocean shipping containers for transport to market. A loading dock with three stalls for the semi-trailers is located on the north side of the building. This area can accommodate approximately 500 tons of material.

d. Materials removal

(1) Load-out of recyclable materials

Processed material is either baled or collected in drop boxes. As material is baled, it is either stored or loaded directly into shipping containers. Once these containers are full they are removed from the premises. Sufficient quantities of material to ship loads of paper/fiber to market are generally collected daily. It may take up to 60 days to accumulate a load of plastic materials

(2) Removal of non-recoverable residues

Non-processible and residual refuse from the processing system is transported to the Kirby Canyon Sanitary Landfill for final disposal. Transfer trucks (48' tractor-trailer with walking floor) are loaded with compacted solid waste through the back of the truck's trailer. Once the vehicle is loaded, it departs for the Kirby Canyon Landfill if permissible within the time restrictions of freeway use and landfill operating hours. Transfer trucks are restricted from departing the SMaRT Station to deliver municipal solid waste to Kirby Canyon Landfill between 4:30 PM and 5:30 PM Monday through Friday except holidays, and from departing Kirby Canyon to return to the SMaRT Station between the hours of 7:15 AM and 8:30 AM, Monday through Friday except holidays. The City, as a traffic mitigation measure, places these restrictions for the use permit issued for the SMaRT Station. If restricted from accessing the freeway or the landfill at the time the transfer trucks are loaded, trucks are parked on the SMaRT Station floor overnight until they are able to depart the facility within the allotted times.

(3) Removal of hazardous materials

When storage capacity is reached or within 90 days, whichever comes first, all hazardous material is removed from the hazardous waste storage container by a licensed contractor and lab-packed for transport to an appropriate and permitted hazardous waste recycling or disposal facility.

5. STATION MAINTENANCE

a. General

The facility operator is contractually required to maintain all property, facilities, and equipment in a safe, clean, neat, and operable condition at all times. The agreement includes operating standards and procedures that must be followed to insure maintenance and housekeeping standards are met. A Maintenance Plan defines the frequency and nature of required maintenance tasks. The facility operator retains monthly reports confirming completion of maintenance tasks in accordance with the maintenance plan.

b. Station Cleaning

Tractors and transfer trailers are thoroughly washed on the exterior at least once per week and thoroughly cleaned with pressurized hot water at least once per year or as

recommended by the equipment manufacturer. At present, this is conducted at an off-site facility. The original SMaRT Station design included vehicle washing on the SMaRT Station floor. This option may be implemented if wastewater management and compliance issues can be addressed satisfactorily.

Building office areas are cleaned daily. Areas within buildings and structures occupied by workers are swept daily and washed, if necessary. The compactor loading area and access ramps are cleaned and swept at the end of each operating day.

The exterior of the transfer building is thoroughly cleaned with pressurized hot water at least once per year. The SMaRT Station was designed and constructed with a drainage system within the facility, which collects incidental waste water emanating from the refuse on the floor, and any rinsate generated. This liquid is collected in a sump and is currently removed as needed to an off-site treatment facility. Any wash water run-off, which drains to the exterior of the facility, may be prevented from entering storm drains by blocking drains with temporary seals. All equipment is cleaned and maintained as recommended by the manufacturer and environmental health laws. Cleaning criteria are part of the above-mentioned operating standards and procedures exhibit to the operating agreement.

6. HEALTH AND SAFETY PROGRAM

a. Sanitary Facilities

The SMaRT Station has sanitary facilities for both men and women, which are located in the Offices/Visitor center. These facilities include lockers, showers, toilets, sinks, soap and towel dispensers, and hot and cold running water. Facilities for visitors are separate from facilities for employees. Additional restrooms are available adjacent to the maintenance shop and at the southwest corner of the main building. Portable toilets are provided for commercial drivers on the north side of the structure near the wood processing building.

b. Water Supply

Potable water for domestic, operations, and fire control uses is available from existing 12-inch water mains at the intersection of Caribbean and Borregas and Caribbean and Crossman. An eight-inch line serves the WPCP from the main at Caribbean and Borregas. Drinking water is available at SMaRT Station Offices and at the Visitor Center. Landscape irrigation is supplied by a separate main carrying reclaimed wastewater from the Water Pollution Control Plant. Pressurized water supplies the fire suppression system. Should a firehose be used, a pressure switch instantly notifies a central alarm contractor, which notifies the Fire Department, triggering an automatic emergency response.

c. *Communications Facilities*

The SMaRT Station has telephone service at the Office and Visitor Center, inside the processing facility and maintenance shop, and at the scale house. Radio communication, consisting of hand-held two-way radios operated by the Facility Operator also links all of these locations. Emergency telephones are located in the MRF, Wood Room and Transfer areas of the facility. The SMaRT Station Operator monitors process, unloading, load-out, and a variety of other activities on a multi-screen video monitoring system.

d. *Lighting*

The main processing facility is equipped with an array of Halide light fixtures, each with a light intensity of 30 candlepower. The outer road area of the facility is equipped with Halide light fixtures with 3-5 foot candles of power.

e. *Fire Fighting Equipment*

The SMaRT Station is equipped with all the fire fighting apparatus required by the City of Sunnyvale's fire codes. This equipment is maintained in accordance with all codes and personnel have been trained to use and maintain this equipment. The facility has a sprinkler system with varying levels of pressure based on whether certain areas within the station are zoned as a hazardous area. The facility is also equipped with fire hoses, extinguishers, and other fire suppression equipment. Should a fire hose be used, a pressure switch triggers an alarm to a central monitoring facility, which in turn dispatches the Fire Department. The City of Sunnyvale's Fire Station Number 2 is located within 1.5 miles of the SMaRT Station.

f. *Protection of Users*

The SMaRT Station is designed to provide workers and public with proper protection from hazards. Railings and other protection devices such as screens and protective coverings are strategically positioned to keep people away from dangerous areas and equipment. Safety of personnel and public is also addressed in the contractor's Injury and Illness Prevention Program.

g. *Safety Equipment*

All employees at the site have been issued, and are required to wear, flag vests, hard hats, and eye protection. Gloves, dust masks, boots, and ear and eye protection are issued and used as required. Emergency eye wash units are placed throughout the facility working areas. Public visitors to the facility are also required to wear flag vests, hard hats and eye protection. The facility also provides sanitary facilities for employees to wash their hands and has several emergency eye wash stations throughout the facility. Two Automated External Defibrillator (AED) units

are provided by the City of Sunnyvale at the east and west ends of the facility. Key personnel are trained in first aid, CPR and AED operation in the event of a medical emergency.

h. Power Failures

The SMaRT Station is equipped with a battery system and diesel-powered backup generator which gives the facility emergency lighting and refuse load-out capabilities in the case of a power failure.

C. STATION CONTROLS

1. NUISANCE CONTROL

The SMaRT Station has the potential to create nuisance problems such as the attraction of vectors, the generation of odor, dust, and noise, and to impact surrounding land uses with night lighting. The SMaRT Station has been constructed and operated in conformance with state, regional, and local laws which are designed to prevent public nuisance problems from arising. In addition, the design and construction of the SMaRT Station provide for compliance with permits issued for facility operation and for CEQA approval of the project.

Potential nuisances are eliminated or minimized by thoroughly cleaning the station each day, keeping all refuse-related operations within the enclosed building, transferring the waste from the station to the landfill within 48 hours, litter control programs, and installing directional night lighting.

Attraction of vectors, seagulls in particular, was initially a problem at the SMaRT Station. A grid of optimally spaced monofilament wires was installed above the unloading areas to disrupt the flight patterns of seagulls. This system has been successful at effectively deterring seagulls from feeding at the SMaRT Station. Regular service by a pest extermination service has been successful in controlling insect and rodent vectors.

2. PASSIVE LANDFILL GAS VENTING SYSTEM

The adjacent closed Sunnyvale Landfill continues to generate landfill gas, which has the potential to migrate to and collect under structures such as the SMaRT Station. The SMaRT Station structure was designed to mitigate landfill gas migration by including a passive venting system.

The landfill gas passive ventilation system consists of the following:

- Perforated pipe collection system located beneath the floor slab within the main processing building and office building, and beneath the pits below the conveyors

- Underground perforated pipes are connected to vertical vent pipes that extend three feet above the roof of the processing building. A drawing of the methane gas ventilation system is shown in Figure A-11.
- A system of sensors and alarms is located inside the SMaRT Station offices, to alert staff should unhealthy conditions develop inside the office.

The closed Sunnyvale Landfill is equipped with a landfill gas extraction system, which maintains a continuous vacuum on the landfill. The landfill gas extraction system is comprised of approximately 80 gas wells connected to a network of pipes which distribute a vacuum from a central blower, which draws the gas to a set of engine generators and a landfill gas flare. The gas extraction system is operated with several goals, one of which is preventing migration of landfill gas to neighboring structures, including the SMaRT Station.

3. DUST CONTROL

Dust generation is inherent in solid waste handling operations and wood grinding operations. For the SMaRT Station, the following dust control measures have been implemented:

- Three (3) large exhaust fans are strategically located within the building with separate air intakes located at dust-generating points such as truck unloading and conveyor loading points.
- In the truck unloading and waste transfer area, a wet suppression misting system is operated to suppress airborne fugitive dust emissions.
- The wood and yard waste system has a separate dust collection system at the wood grinder to suppress local dust emissions. The wood grinder has been partially enclosed with a hood that collects dust to a baghouse for collection.

4. VECTOR AND BIRD CONTROL

Vectors are animals that may contact refuse and carry disease. They include birds, rodents, and flying and crawling insects. While typically they are a concern at landfills, vectors have not posed a significant problem at the SMaRT Station, with the exception of gulls. As described above, erecting monofilament wires in a grid outside the waste unloading areas has mitigated the attraction of gulls. The spacing of the grid interferes with the gull's normal flight patterns, inhibiting their ability to alight or take wing. The operations are enclosed, and the wastes are compacted and removed within 48 hours, so refuge or breeding areas for rodents or flies is limited and controllable.

5. DRAINAGE CONTROL

Storm water from the exterior of the SMaRT Station is collected by grate drains and catch basins equipped with sediment and oil and grease filters, and conveyed via pipes to the existing storm water channels located west and north of the site. This

storm water is discharged to the Guadalupe Slough through the existing Baylands pump station at the northwest corner of the project. The station operation is enclosed, so storm water contact with refuse is minimal. Some storm water may nevertheless come into contact with refuse. Storm drains have been equipped with specialized filters designed to remove sediment, hydrocarbons, and oil and grease. Filters are inspected and serviced weekly during the wet season. Inspections are recorded on the maintenance log and reported by the Station operator on a monthly basis. Storm water which contacts refuse on the tipping floor drains internally and is removed for off-site treatment.

The sanitary sewer flow from restrooms, showers, etc., is separated from the washdown/process water source.

Water used to wash down the SMaRT Station floors or equipment drains to the center floor drain, which in turn collects in a sump located at the east end of the SMaRT Station. Wastewater in the sump is presently pumped into a tank truck for transport to a permitted liquid waste treatment facility. Revisions to the SMaRT Station wastewater pretreatment system may enable the resumption of permitted discharge of SMaRT Station wastewater to the sanitary sewer at a future date.

6. LITTER CONTROL

Local ordinances and state regulations require refuse collection and transfer trucks to be closed or covered. Enforcement of these statutes is essential for effective litter control. The Sunnyvale Public Safety Department and the California Highway Patrol provide enforcement of the California Vehicle Code, particularly along access roads leading to the SMaRT Station. As a second means of enforcement, vehicles with uncovered loads may be turned away by the station. The CHP frequently establishes a vehicle safety checkpoint on Borregas Avenue at the entrance to the SMaRT Station, which also serves to reinforce the covered load requirement.

To minimize the amount of litter blown outside the main building, the station floor is regularly swept to collect debris that may become separated from the main working area. The site is fenced to contain wind-blown litter. On-site streets and Caribbean Drive are checked regularly to assure that litter does not accumulate. A litter control plan has also been implemented. The program includes a twice-weekly litter pick-up on the adjacent landfill surface and on Mathilda Ave., Caribbean Drive and Borregas Ave. between Highway 237 and the project site. Litter is confined to a limited area within the grounds of the SMaRT Station, and is removed each operating day.

7. NOISE CONTROL

Noise is generated at the SMaRT Station by refuse handling equipment inside the facility, truck traffic traveling around the site, and project-related off-site traffic. Because most refuse handling and processing equipment is enclosed, activity inside the station does not create significant impacts to neighboring businesses. Engine noise from trucks on site does not exceed noise standards at the property boundary or those established for parklands. The station contributes to the cumulative noise

impact of the Water Pollution Control Plant, and the asphalt/concrete recycling operation atop the east hill of the landfill. Off-site project related traffic has not been observed to have a significant impact along haul routes or near the station. The largest predicted noise increase from off-site project related traffic was 0.5 dB(A) at the intersection of Borregas Avenue and Caribbean Drive. There have been no complaints regarding noise generated by the SMaRT Station or related traffic.

8. ODOR CONTROL

The odor associated with municipal solid waste is mainly from the decay of organic materials within the refuse. The SMaRT Station handles a variety of organic materials that do become malodorous. The characteristic odor of refuse is at times apparent within the transfer building itself and immediately downwind of the door openings outside the buildings.

The potential for odor buildup is greatest in hot weather, which speeds bacterial decomposition of waste high in organic matter. The warm weather effect is somewhat counteracted by the fact that warm weather coincides with the dry season. Moisture as well as heat favor bacterial action. As hot weather periods are associated with dry periods, the moisture content of loads will be reduced, thus reducing the rate of decomposition.

The project site is adjacent to other industrial uses, which also generate odors, such as the Sunnyvale Water Pollution Control Plant and the Cargill (Leslie) salt ponds. There are currently no sensitive receptors, i.e. residential neighborhoods, schools, hospitals, restaurants, etc., immediately downwind from the project. The nearest neighbors to the SMaRT Station include the Twin Creeks Softball Park, the Sunnyvale Water Pollution Control Plant, and south of Caribbean Drive, the businesses occupying the Moffett Industrial Park.

The adjacent landfill is closed, and parts are now used by the public for walking and jogging. These visitors to the landfill may be subjected to odors from the SMaRT Station and the WPCP. At certain times of year, the neighboring salt ponds may also give off unpleasant odors. Under most conditions, odors from the SMaRT Station dissipate before reaching the nearest downwind receptors. Odor is at times present during warm weather if waste is retained at the SMaRT Station for long periods of time. North winds coincide with warm weather, which dissipate odors but also spread them under certain conditions. Non-specific complaints of odors from the general vicinity of the SMaRT Station, WPCP, and Cargill Salt have been registered, however none have been due to the operation of the SMaRT Station. There have been no odor complaints regarding SMaRT Station operations documented by the Bay Area Air Quality Management District.

The California Integrated Waste Management Board has established a maximum residence time of 48 hours for waste held in transfer stations. Limiting the time waste spends in the SMaRT Station reduces the amount of decomposition of organic materials which takes place in the station building and thus reduces the amount of malodorous gas emitted by the decomposition process. Should odor

become a problem at the SMaRT Station, adopting a residence time shorter than 48 hours could further reduce the odor producing potential of waste.

9. TRAFFIC CONTROL

Figures A-4 and A-10 illustrate the on-site traffic circulation. The access road to the SMaRT Station (Borregas Avenue north of Caribbean Drive) is two lanes in each direction. A four-lane road can carry as much as 2,400 vehicles in the peak hours. The SMaRT Station generates a maximum of approximately 73 vehicles per hour. The roadway has more than adequate capacity to serve the expected traffic volumes.

A total of 600 feet of queuing area (three lanes of 200 feet each) is provided at the commercial and public entrance. The 400 feet dedicated to commercial traffic is sufficient to stack 5 large trucks. During peak periods, incoming truck traffic averages about 2 vehicles per minute. The queue length is adequate, provided that incoming trucks are processed at an average of 1 minute per vehicle (at each scale).

The 200 feet of available queuing area for public users holds about 8 vehicles. The maximum rate of incoming public vehicles is about 2 per minute. A processing rate of about 45 seconds per vehicle is needed to keep queues limited to the storage area.

During extra dump weekend events two lanes are provided for the incoming event traffic queue. There is no measuring or weighing of vehicles (only an ID check), so there is not a wait at the scalehouse. This queuing area extends approximately 1000 feet from the point of the East Hill access road west to the intersection at Caribbean Drive. This allows area for queuing of approximately 80 residential vehicles. Queue area for approximately 15-20 additional vehicles is provided on the roadway and areas adjacent to the tipping floor. Historically, at peak hours (typically 8:30 a.m. – 10:00 a.m.) during these events traffic has queued onto Caribbean Drive. During these peak periods, a traffic attendant and signage assists in directing traffic from eastbound Caribbean and northbound Borregas to Crossman where traffic destined for the event is directed to make a U-turn and enter the #1 lane (of three). This has not impacted traffic on Caribbean and Borregas since weekend traffic on these streets is very minimal.

D. STATION RECORDS AND REPORTING PROCEDURES

1. WEIGHT VOLUME RECORDS

Daily records of traffic volumes and weight are generated at the scalehouse. Daily, monthly and annual reports are generated using these reports. Data is based on actual tonnage over the scale, and by volume for public hauled material. Public Haul volume is converted to tons based on the factors listed below. Data is also kept on material leaving the facility for transport to market or to the landfill. Tonnage records are maintained on-site in the facility's offices.

Waste Type	Conversion Factors (lbs/cubic yard)
Misc. Public	308
Demolition Debris	1000
Asphalt	1000
Concrete	2000
Dirt	2000

Tare weights for packer type refuse trucks are determined using an average of three scale weights taken not less than once annually. Roll-off trucks are weighed full and empty on each trip.

2. SPECIAL OCCURRENCES

A daily log is maintained at the facility to record special occurrences such as injuries, fires, equipment failures, vehicle accidents, spills, hazardous materials incidents, and other incidents that are not part of normal daily operations. Once incidents of special occurrence are reported to a facility supervisor, the supervisor writes a detailed account of the incident and a description of the action that was taken. This log is kept at the facility's offices. The log is updated daily and if no special occurrences take place it is noted in the log.

3. INSPECTION OF RECORDS

Records regarding the facility's operation are available during normal business hours for inspection and review by authorized agencies. These records are maintained at the facility's on-site offices for a period of not less than three years.

APPENDIX A

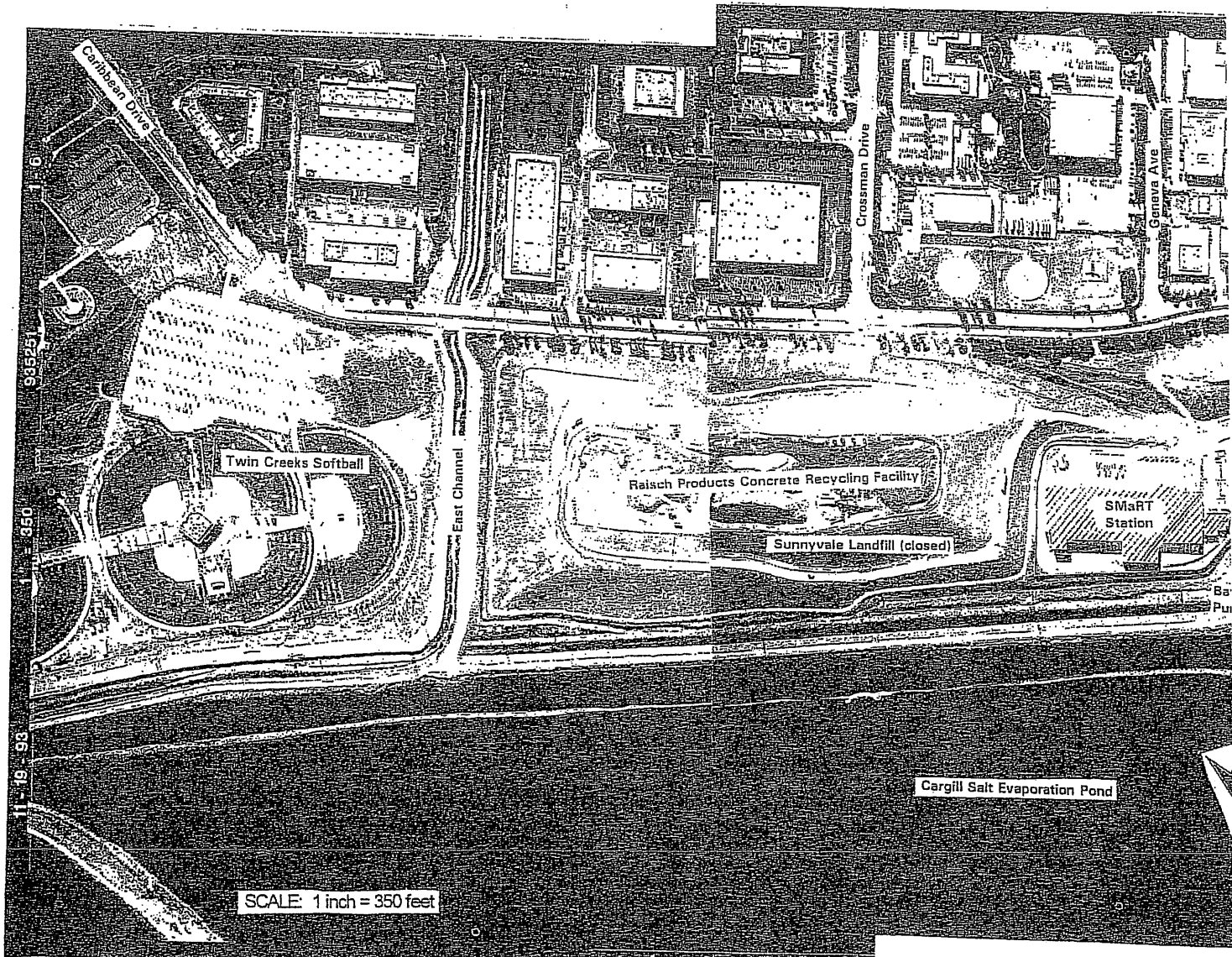
Site Maps and Design Drawings

Figure A-1	Land Uses Surrounding the SMaRT Station
Figure A-2	Location Map and Cities Served by SMaRT
Figure A-3	Zoning Map of SMaRT Station and Surrounding Parcels
Figure A-4	SMaRT Station Layout
Figure A-5	SMaRT Station Material Flow Schematic
Figure A-6	Diagram of Waste Handling Activities
Figure A-7	
Figure A-8	Utility Lines and Flood Protection Levees
Figure A-9	Locations of Signs to Directing Traffic and Inform Customers
Figure A-10	Diagram of On-Site Traffic Circulation
Figure A-11	Design Drawing for Gas Ventilation System

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Aero-Geodetic Corporation

FIGURE II-3
SERVICE AREA AND HAUL ROUTES

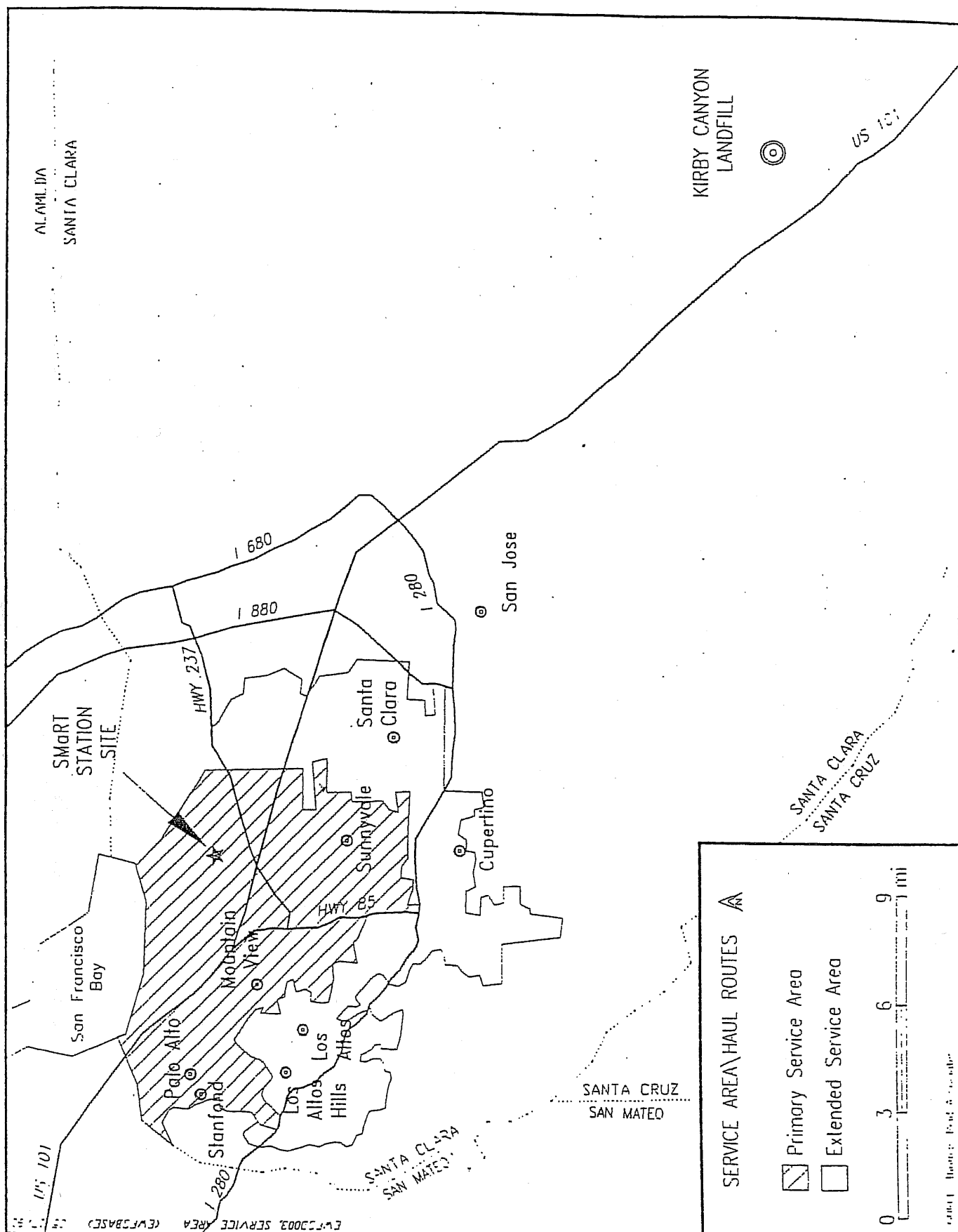
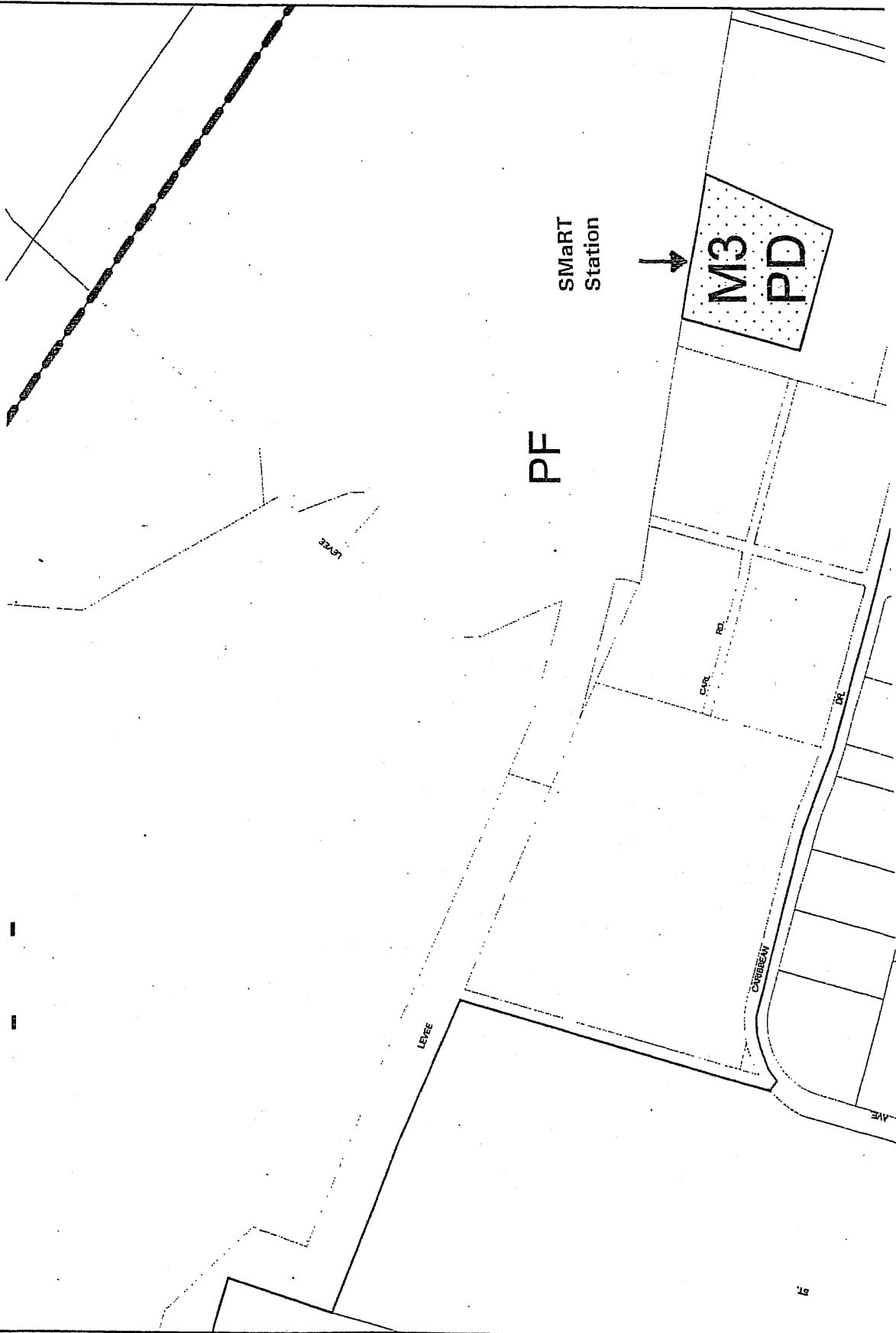
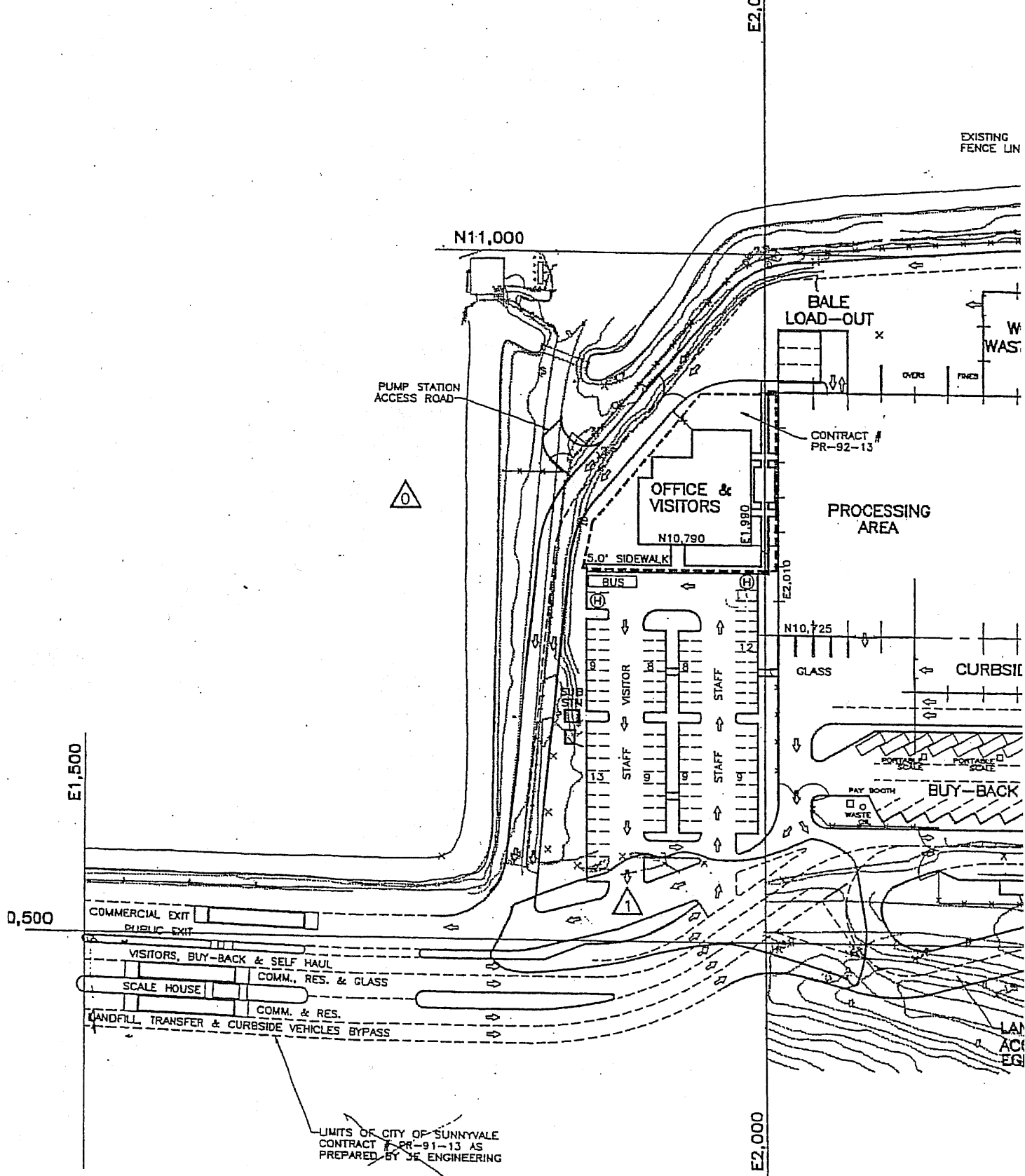


FIGURE A-2

Service Area

Zoning in the Vicinity of the SMaRT Station





91	RWC	ISLANDS REVISED
92	RWC	ISSUED FOR REFERENCE PR-92-13
16	RWC	APPROVED FOR CONSTRUCTION
7	RWC	WAY WASTE & BALE LOAD-OUT RELOCATED
3	RWC	FENCE REVISED - ISSUE FOR BID PR-92-13
1	RWC	ISSUED FOR ADDENDUM #1
1	RWC	CLIENT REVIEW-PR-92-13
1	RWC	LANDFILL ACCESS/EGRESS & PARKING AREAS REVISED
1	RWC	BID PURPOSES
1	RWC	PARKING ENTRANCE REV'D / OWNER REVIEW
21	RWC	COMPACTOR ADDITION / OWNER REVIEW
2	VCH	REVISED PARKING, BUYBACK & WOODWASTE AREAS
BY		REVISION

JOB No.

78783

SCALE:

1" = 50'

DESIGNED:

DRAWN BY:

VCH

CHECKED BY:

PROJECT ENGINEER:

RWC

APPROVED BY:

DATE:

URS
CONSULTANTS

WESTERN 1

500 N.E. MU
PORTLAND
9723

PHASE 2

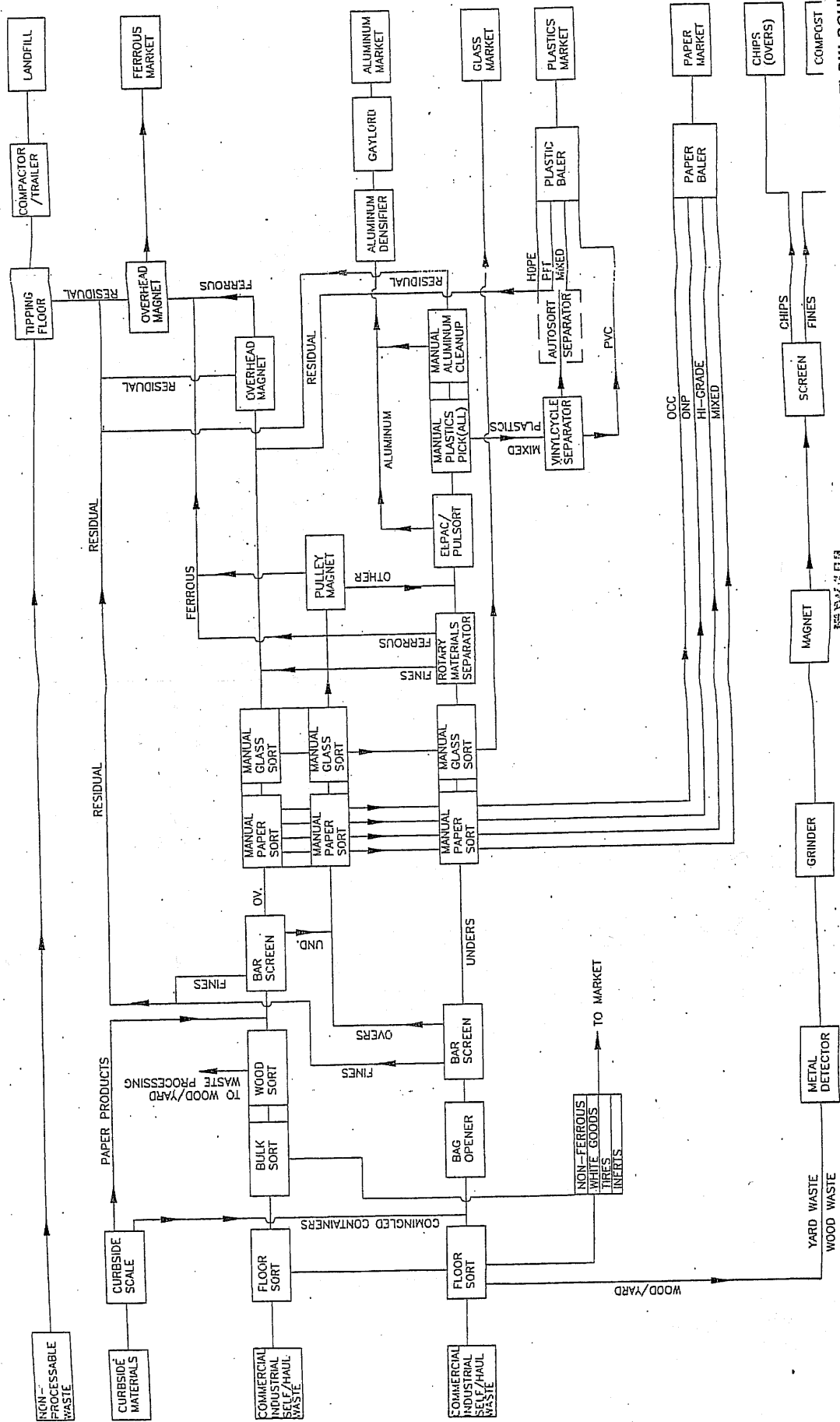


FIGURE A-5 SMART STATION MATERIAL FLOW SCHEMATIC

